

## **Clinical Summary**

### **Background**

The medical literature and some poison control and clinical toxicology societies have indicated that the safety and efficacy of ipecac syrup for the use as an over-the-counter emetic in the management of poisoning should be re-evaluated. The Division of Over-the-Counter Drug Products has invited experts to provide a detailed analysis of available clinical data. This Advisory Committee meeting is being convened to address whether ipecac syrup should remain available as an OTC drug product.

In 1965, the Commissioner of Food and Drugs issued a regulation that ipecac syrup should be available for sale without a prescription. CFR 201.308 states that it was the "unanimous recommendation of the American Academy of Pediatrics, the American Association of Poison Control Centers, the American Medical Association, and the Medical Advisory Board of the Food and Drug Administration that ipecac syrup ... be permitted to be sold without prescription so that it will be readily available in the household for emergency treatment of poisonings, under medical supervision... In view of [these] recommendations, the Commissioner of Food and Drugs has determined that it is in the interest of the public health for ipecac syrup to be available for sale without prescription...". Ipecac syrup is listed as an active ingredient in the Poison Treatment Tentative Final Monograph (TFM) issued January 15, 1985. Its proposed indication is "For emergency use to cause vomiting in poisoning."

Ipecac contains two active alkaloids, cephaline and emetine. Both act locally on gastric mucosal receptors and cephaline also acts at the chemoreceptor trigger zone in the brainstem. The time from ipecac syrup administration to the onset of vomiting is usually 15 to 30 minutes following a single dose and usually within 15 minutes following a second dose, with the duration of vomiting lasting usually one to two hours. Vomiting occurs in 82% of children after one dose, 99% after two.<sup>1,2</sup>

Other agents used for gastric decontamination include activated charcoal (adsorbent), magnesium citrate, polyethylene glycol, and sorbitol (cathartics).

### **Ipecac Efficacy**

In animal studies, ipecac syrup induced emesis removes 10% to 60% of an ingested substance. In clinical studies, a mean of 30% of a toxin can be recovered from an individual, but the amount is variable (range of 28%-83%).<sup>1,3,4</sup> The effectiveness in removing ingested materials declines with time and is greatly diminished after 30 minutes. Emesis can reduce a toxic burden by about one half if it occurs within 60 minutes, but when ipecac syrup is administered 90 minutes or more after a toxin is ingested, there is no identifiable benefit.<sup>5</sup> Some studies fail to demonstrate that ipecac syrup improves patient outcome.<sup>6</sup> Most studies exclude the use of ipecac syrup in life-threatening intoxications, so it is difficult to determine the benefit of ipecac syrup in those situations.<sup>3</sup> The position statement of the American Academy of Clinical

Toxicology stated that, “the data was insufficient to support or exclude ipecac administration soon after poison ingestion.”<sup>3</sup>

In prospective randomized clinical studies, gastric emptying before charcoal generally did not improve outcomes over use of charcoal alone.<sup>7-9</sup> However, in obtunded patients, lavage before administering charcoal offered benefit if performed within 1 hour of ingestion as measured by multiple endpoints that comprised an overall “Clinical Outcome”.<sup>7</sup> Gastric emptying may delay the administration of charcoal.<sup>10,11</sup>

### **Ipecac Syrup Safety**

The potential complications of the therapeutic use of ipecac syrup are well documented although serious consequences rarely occur.<sup>3</sup> Common adverse effects of ipecac syrup include transient drowsiness or lethargy, diarrhea. Prolonged vomiting and aspiration can occur. In rare instances, ingestion of therapeutic amounts of syrup of ipecac have caused serious adverse effects such as Mallory Weiss tears, gastric rupture, intestinal perforation, pneumoretroperitoneum, pneumomediastinum, and intracerebral hemorrhage.<sup>2</sup>

### **Ipecac Abuse**

Chronic ingestion of syrup of ipecac by patients with eating disorders or by children who are victims of Munchausen's syndrome by proxy has resulted in vomiting, irritability, hypothermia, dehydration, hypotonia, muscle weakness, skeletal muscle myopathy, diarrhea, elevated CK and/or aldolase levels, cardiomyopathy, tachycardia, prolonged QT interval, and premature atrial and ventricular contractions. Deaths have been reported from cardiomyopathy due to chronic ipecac abuse.<sup>12</sup>

### **Position Statements**

The AACT and the European Association of Poison Centers and Clinical Toxicologists reviewed the scientific literature and issued a position statement in 1997 on ipecac syrup which stated that<sup>3</sup>:

- Ipecac should not be administered routinely in management of poisoning.
- Data is lacking to demonstrate that ipecac improves the outcome of poisoned patients and its routine administration in the emergency room should be discontinued.
- There is insufficient clinical data to support or exclude ipecac administration soon after poison ingestion.
- Ipecac may delay administration or reduce effectiveness of charcoal, oral antidotes, and whole bowel irrigation.
- Ipecac should not be administered to patients with decreased level of consciousness or impending loss of consciousness, or to patients who have ingested corrosives or hydrocarbons with high aspiration potential.

This statement has been endorsed by the American Board of Applied Toxicology and the Canadian Association of Poison Control Centers. As of the year 2000, it had not been endorsed by the American College of Emergency Physicians, or the American Academy of Pediatrics.<sup>4</sup>

The American College of Emergency Physicians' website recommends that households should "Keep a small bottle of Syrup of Ipecac on hand... but use only if directed by a physician or a Poison Control Center".<sup>4,13</sup> Likewise the American Medical Association (AMA) website supports advising parents of young children to have a one-ounce bottle of syrup of ipecac in the medicine cabinet to use in the event of accidental poisoning, with a label indicating the name of the substance, the proper dosage and the contraindications to its use. The AMA recommends that a physician, an emergency room, or a poison control center be called for advice before administering syrup of ipecac.<sup>4,14</sup> The AMA website also states that syrup of ipecac should continue to be available to the public as a non-prescription item.<sup>15</sup>

## References

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